

This listing of claims will replace all prior versions, and listings, of claims in the application:

1 Claim 1 (original): An electrical power conversion system comprising:
2 a load receiver for powering and controlling loads, said load receiver
3 comprising:
4 a decoupler for decoupling a communication signal from an electrical
5 power bus, said communication signal containing encoded load
6 information, wherein the decoupler electrically isolates the
7 communication signal from the power signal;
8 a data receiver for receiving the communication signal from the
9 decoupler and deriving data therefrom;
10 a data decoder for decoding data received from the data receiver and
11 converting it to a converter signal according to the encoded load
12 information;
13 and a power converter for receiving the converter signal from the data
14 decoder, wherein the power converter converts an electrical
15 power bus input of a first voltage into a power output at a
16 second voltage for powering the loads.

1 Claim 2 (original): An electrical power conversion system according to claim
2 1, further comprising:
3 a load transmitter for transmitting encoded load information in a
4 communication signal onto the electrical power bus, said load
5 transmitter comprising:
6 a data encoder for encoding load information into data;
7 a data transmitter for receiving the data from the data encoder and
8 transmitting a communication signal; and
9 a coupler for receiving the communication signal from the data transmitter and
10 coupling the communication signal onto the electrical power bus.

1 Claim 3 (original): An electrical power conversion system according to claim
2 1, wherein:
3 the load information contains load state and load address information;
4 and further wherein the power converter sets the state of the load according
5 to the converter signal when the power converter is powering the load
6 associated with that load address.

1 Claim 4 (original): An electrical power conversion system according to claim
2 2, wherein
3 the load information contains load state and load address information; and
4 further wherein
5 the power converter sets the state of the load according to the converter
6 signal when the power converter is powering the load associated with
7 that load address.

1 Claim 5 (original): An electrical power conversion system according to claim 2
2 further comprising:
3 a data encoder for encoding return load information from the power converter
4 or the load;
5 a load return transmitter for transmitting return load data from the data
6 encoder;
7 a coupler for coupling communication data received from the load return
8 transmitter to the electric power bus.

1 Claim 6 (original): An electrical power conversion system according to claim
2 5, wherein
3 the load information contains load state and load address information; and
4 further wherein
5 the power converter sets the state of the load according to the converter
6 signal when the power converter is powering the load associated with
7 that load address.

1 Claim 7 (original): An electrical power conversion system according to claim 1
2 for powering vehicle loads, wherein the first voltage is about thirty-six volts to forty-
3 two volts (36V-42V) and the second voltage is about twelve volts to fourteen volts
4 (12V14V).

1 Claim 8 (original): An electrical power conversion system according to claim 2
2 for powering vehicle loads, wherein the first voltage is about thirty-six volts to forty-
3 two volts (36V-42V) and the second voltage is about twelve volts to fourteen volts
4 (12V14V).

1 Claim 9 (original): An electrical power conversion system according to claim 3
2 for powering vehicle loads, wherein the first voltage is about thirty-six volts to forty-
3 two volts (36V-42V) and the second voltage is about twelve volts to fourteen volts
4 (12V10 14V).

1 Claim 10 (original): An electrical power conversion system according to claim
2 4 for powering vehicle loads, wherein the first voltage is about thirty-six volts to forty-
3 two volts (36V-42V) and the second voltage is about twelve volts to fourteen volts
4 (12V14V).

1 Claim 11 (original): An electrical power conversion system according to claim
2 5 for powering vehicle loads, wherein the first voltage is about thirty-six volts to forty-
3 two volts (36V-42V) and the second voltage is about twelve volts to fourteen volts
4 (12V14V).

1 Claim 12 (original): An electrical power conversion system according to claim
2 6 powering vehicle loads, wherein the first voltage is about thirty-six volts to forty-two
3 volts (36V-42V) and the second voltage is about twelve volts to fourteen volts (12V-
4 14V).

1 Claim 13 (original): An electrical power conversion system for powering
2 vehicle loads, comprising:
3 a load transmitter for transmitting encoded load information in a
4 communication signal onto a vehicle electrical power bus operating at
5 about thirty-six volts to forty-two volts (36V-42V) DC, said load
6 transmitter comprising:
7 a data encoder for encoding load state and load address information
8 into encoded data;
9 a frequency shift keying transmitter for receiving the encoded data from
10 the data encoder and transmitting the encoded data as an FSK
11 communication signal;
12 and a coupler for coupling the FSK communication signal onto the
13 vehicle electrical power bus;
14 and a load receiver for controlling vehicle loads and providing said
15 vehicle loads with electrical power at about twelve volts to
16 fourteen volts (12V-14V), said load receiver comprising:
17 a decoupler for decoupling the FSK communication signal from
18 an electrical power bus, said FSK communication signal
19 containing encoded load state and load address
20 information, wherein the decoupler electrically isolates
21 the communication signal from the power signal;
22 a frequency shift keying receiver for receiving the FSK
23 communication signal from the decoupler and deriving
24 encoded data from the FSK communication signal;
25 a data decoder for decoding the encoded data received from the
26 frequency shift keying receiver and converting it into a
27 converter signal according to the decoded load state and
28 load address information; and
29 a power converter for converting the vehicle electrical bus power
30 signal of about thirty-six volts to forty-two volts (36V-42V)
31 DC into a load power output equivalent to about twelve
32 volts to fourteen volts (12V-14V) for powering vehicle

33 electrical loads, wherein the power converter sets the
34 state of a load in accordance with the converter signal
35 when the power converter is powering a load associated
36 with that load address.

1 Claim 14 (original): An electrical power conversion system for a vehicle
2 electrical system according to claim 13, wherein the power converter contains a DC-
3 to-DC converter.

1 Claim 15 (original): An electrical power conversion system for a vehicle
2 electrical system according to claim 13, wherein the power converter contains a DC-
3 to-AC inverter.

1 Claim 16 (original): An electrical power conversion system for powering
2 vehicle loads, comprising:
3 a load transmitter for transmitting encoded load information in a
4 communication signal onto a vehicle electrical power bus operating at
5 about thirty-six volts to forty-two volts (36V-42V) DC, said load
6 transmitter comprising:
7 a data encoder for encoding load state information and load address
8 information into encoded data;
9 a frequency shift keying transmitter for receiving the encoded data from the
10 data encoder and transmitting the encoded data as an FSK
11 communication signal onto a vehicle communication bus;
12 and a load receiver for controlling vehicle loads and providing said vehicle
13 loads with electrical power at about twelve volts to fourteen volts (12V-
14 14V), said load receiver comprising:
15 a frequency shift keying receiver for receiving the communication signal from
16 the vehicle communication bus and deriving encoded data from the
17 FSK communication signal;

18 a data decoder for decoding the encoded data received from the frequency
19 shift keying receiver and converting it into a converter signal according
20 to the decoded load state and load address information;
21 and a power converter for converting the vehicle electrical bus power signal of
22 about thirty-six volts to forty-two volts (36V-42V) DC into a load power
23 output equivalent to about twelve volts to fourteen volts (12V-14V) for
24 powering vehicle electrical loads, wherein the power converter sets the
25 state of a load in accordance with the converter signal when the power
26 converter is powering a load associated with that load address.

1 Claim 17 (original): An electrical power conversion system for a vehicle
2 electrical system according to claim 16, wherein the power converter contains a DC-
3 to-DC converter.

1 Claim 18 (original): An electrical power conversion system for a vehicle
2 electrical system according to claim 16, wherein the power converter contains a DC-
3 to-AC inverter.

1 Claim 19 (new): An electrical power conversion system comprising:
2 a power converter connected to an electrical power bus that provides DC
3 current, said power converter for converting the bus voltage into a load
4 voltage different from the bus voltage, said load voltage for powering a
5 load; and
6 a data receiver for receiving an encoded communication signal from the
7 electrical power bus, said encoded communication signal including
8 encoded load information for controlling an operation of said power
9 converter.

1 Claim 20 (new): The electrical power conversion system of claim 19, further
2 comprising a data decoder for decoding the encoded communication signal and
3 converting it to a control signal for said controlling an operation of said power
4 converter, wherein said controlling is done according to said load information.